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The genus Vernonia in the Bahamas

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In the recent Bahamian collections made for the New York Botanical Garden is abundant material representing the genus *Vernonia* and including some interesting new forms. Dr. N. L. Britton has referred them to me for study and has also given numerous valuable suggestions concerning their specific characters. The specimens cited are all in the herbarium of the New York Botanical Garden.

In 1864 Grisebach, in the Flora of the British West Indies, described a species of *Vernonia* from the Bahamas as *V. bahamensis*. Since then numerous collections have been made and the species has been mentioned frequently in literature pertaining to the islands. It is, however, an aggregate, and three related but distinct species are represented in recent collections. In addition a second type, represented by a fourth species belonging to a widely different section of the genus, has recently been collected and demands recognition as new. A widely distributed tropical species, *V. cinerea*, is introduced in New Providence Island.

Vernonia bahamensis as characterized by Grisebach has the " heads single, sessile at the top of leafy branches." The two related species resemble it to some extent in this character. The three may together be regarded as members of the section *Lepidaploa*, subsection *Scorpioideae*, in which the scorpioid cymes have been much reduced, even to a single flower as in *V. bahamensis*. Indications of this reduction are seen in *V. longifolia* Pers. with its varieties *Sintenisii* Urban and *Vahliana* Urban of the Windward Islands and Porto Rico. The internodes of the cyme are shortened, and the heads are fewer than in typical scorpioid *Vernoniae*, and the whole inflorescence but little exceeds the upper foliage leaves. This group seems to be of equal rank with *Scorpioideae foliatae*, and *Scorpioideae aphyllae*, and the name *Scorpioideae reductae* will indicate the peculiarities of its inflorescence.

The fourth species, of the section *Lepidaploa*, subsection *Paniculatae*, with corymbose peduncled heads, is entirely different from the others and finds its nearest relatives in the United States.

The five species may be separated as follows:

- Herbaceous; heads corymbose, peduncled.
  - Leaves ovate, pubescent. *V. cinerea.*
  - Leaves linear or oblong-linear, glabrous or nearly so. *V. insularis.*
- Frutescent; heads sessile or nearly so, single or in small cymes.
  - Inflorescence of many heads; leaves of an elliptical type, broadest at or near the middle. *V. arctata.*
  - Inflorescence of few heads; leaves broadest above the middle.
    - Leaves oblanceolate, spatulate, or narrowly obovate. *V. bahamensis.*
    - Leaves very broadly obcordate. *V. obcordata.*

VERNONIA CINEREA (L.) Less. Linnaea 4: 291. 1829. *Conyza cinerea* L. Sp. Pl. 862. 1753.

This well-known introduced species differs from the other Bahamian forms in the ovate or ovate-oblong, petioled, undulate leaves. It belongs to the section *Tephrodes*, characterized by achenes without evident ribs. New Providence, *Earle 60*.

Vernonia insularis sp. nov.

§ *Lepidaploa*, *Paniculatae*; perennial by a horizontal rootstock; stem herbaceous or suffruticose, glabrous or minutely puberulent in the inflorescence, erect, 6–10 dm. high, simple or sparingly branched; leaves numerous, alternate, narrowly oblong-linear, entire, obtuse or sub-acute, mucronate, acute or narrowed at the sessile base, one-nerved or with faint lateral veinlets, green and essentially glabrous on both sides, 6–10 cm. long, 0.8–1.2 cm. wide, the upper somewhat smaller; inflorescence terminal, corymbose, lax; heads 4–25, on peduncles 0.5–4 cm. long; involucre at maturity broadly campanulate or depressed-hemispheric, about 5 mm. high; scales glabrous with membranous margins, the outer lanceolate, sharply acuminate, the inner oblong, abruptly acuminate or mucronate; achenes 2 mm. long, striate, sparsely pubescent; pappus tawny, 6 mm. long, the outer series minute.

Great Bahama, pine lands, Eight Mile Rocks, Feb. 5–13, 1905, *N. L. Britton & C. F. Millspaugh 2392a*, type, in fruit; same place and date, *N. L. Britton & C. F. Millspaugh 2392*, a more mature specimen with the achenes gone; same place, April 16–May 8, 1905, *L. J. K. Brace 3683*, young specimens only 2.5–3 dm. high, with the inflorescence just beginning to appear;

Abaco, pine lands, Marsh Harbor, Dec. 21, 1904, *L. J. K. Brace 1835*, past maturity with the achenes gone.

Abaco and Great Bahama islands, from which *V. insularis* only has been collected, are but a short distance from the east coast of southern Florida, and the nearest relative of the species may be looked for there. In leaf-habit and involucre it is not far from the Floridian *V. Blodgettii* Small, and may be connected phylogenetically with it.

Vernonia arctata sp. nov.

§ *Lepidaploa, Scorpioideae reductae;* a much-branched shrub 3–8 dm. high, stem and branches striate, thinly tomentose or glabrate, branches crowded, leafy; leaves broadly elliptic to obovate-oblong, acute or mucronate, entire, acute or obtuse at the base, pinnately veined, brown-tomentose beneath, glabrate above, 1–1.8 cm. long, 0.6–1.1 cm. broad, divaricately spreading or somewhat reflexed, on tomentose petioles 3–7 mm. long; inflorescence flattened, terminating the branches, consisting of several short leafy irregular scorpioid cymes bearing each 1–5 sessile or short-peduncled heads; involucre campanulate, 4–5 mm. high; scales pauciseriate, lanceolate, irregularly imbricated, acute, tomentose; achenes about 13 in each head, pubescent, 2.5 mm. long; pappus nearly white, 5 mm. long, the outer series conspicuous.

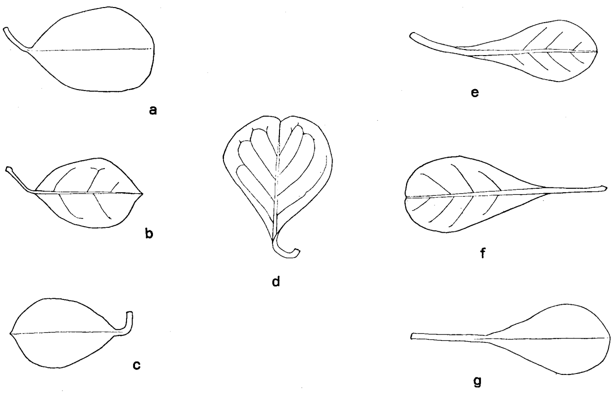

FIGURE 1. Leaf types of (*a*, *b*, *c*) *Vernonia arctata*, (*d*) *V. obcordata*, (*e*, *f*, *g*) *V. bahamensis*. Natural size.

New Providence Island, in dry pine barrens. Most of the recently collected material distributed as *V. bahamensis* belongs here: *A. H. Curtiss 65*, Feb. 5, 1903 (type); *C. F. Millspaugh 2481*, Jan. 24, 1905: *Mrs. E. G. Britton 3275*, Feb. 3, 1905; *N. L. Britton & C. F. Millspaugh 2101*, Jan. 26, 1905; *N. L. Britton 6*, Apr. 7 and 8, 1904; *W. C. Coker 53*, June 20, 1903; *J. I. & A. R. Northrop 101*, Jan. 10, 1890; and two other sheets, in the herbarium of Columbia University, collected by Wm. Cooper.

Several branches usually arise near each other and are straight, virgate, very leafy, and about equal in length. Below the origin of the branches the leaves soon fall off. The inflorescence is sometimes 8 cm. across, and always exceeds the foliage leaves when fully developed. There is some variation among the specimens in the character of the branching but it appears to be due almost entirely to the relative age of the plants as shown by the time of collection.

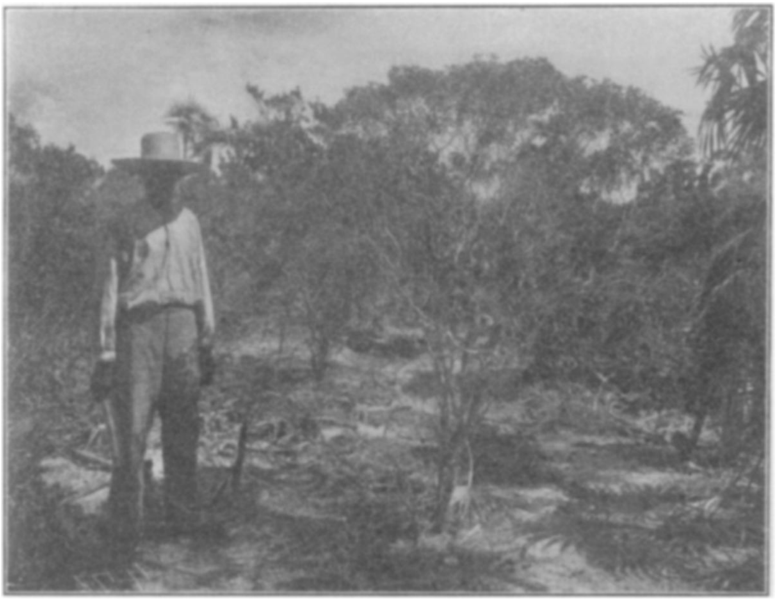

FIGURE 2. Habit photograph of *Vernonia bahamensis* Griseb.

Vernonia arctata is distinguished from *V. bahamensis* by the shorter and broader leaves, the character of the branching, and the conspicuous inflorescence with numerous heads.

VERNONIA BAHAMENSIS Griseb. Fl. Brit. W. Ind. 352. 1864.

A repeatedly dichotomously branched bushy shrub, reaching a height of 2 m. or more, with the leaves confined mostly to the young branches. Stem flexuous, thinly tomentose; younger branches strongly angled; leaves alternate, numerous, spatulate, oblanceolate, or narrowly obovate, entire, rounded at the tip and varying from mucronate to slightly retuse, narrowed at the base into a margined petiole, pinnately veined, tomentose on both sides, especially beneath, 2–3.5 cm. long, including the petiole, 0.5–1.2 cm. wide; heads few, seldom more than four on each branch, single, sessile among the upper leaves, with 13 flowers or fewer, usually 8; involucre campanulate, 3–4 mm. high; scales ovate-lanceolate, sharply acute, loosely imbricated in few series, tomentose; achenes densely hirsute, 2–2.5 mm. long; pappus nearly white, 4–5 mm. long, the outer series conspicuous.

Fortune Island, *Eggers 3832*, Apr. 2, 1888; Inagua, *Nash & Taylor 1017*, Oct. 14, 1904, and *1344*, Oct. 28, 1904.

Notes accompanying the specimens indicate that it grows in the so-called white lands, has purple flowers, and is locally known as white sage; the photograph, for which I am indebted to Mr. G. V. Nash, shows the general character of the plant.

The last cited specimen has been compared with the original collections in the Kew Herbarium, and pronounced identical by Sir William Dyer, and later also by Dr. N. L. Britton. Fortune Island and Inagua Island are near the southern end of the Bahamian archipelago, and the latter is not far from Haiti. As indicated by the specimens at hand, *V. bahamensis* and *V. arctata* are distinct not only in structure but also in geographical distribution.

Vernonia obcordata sp. nov.

§ *Lepidaploa, Scorpioideae reductae;* a much-branched shrub 6–9 dm. high, with stiff crooked branches, bearing leaves only on the young shoots; young branches strongly angled and tomentose, becoming terete and glabrous with age; leaves numerous, crowded, broadly obcordate, entire, narrowed at the base into a petiole 5 mm. long, pinnately veined, closely gray tomentose on both sides, especially beneath, blade 0.8–1.5 cm. long, 0.7–1.5 cm. wide, the cordation at the apex 2–3 mm. deep; heads few, single, sessile among the upper leaves, 8–13-flowered; involucre campanulate, 4–5 mm. high; scales ovate-lanceolate, acute, irregularly and loosely imbricated, tomentose; achenes as in *V. bahamensis*; pappus yellow.

Little Inagua, *Nash & Taylor 1206*, Oct. 20, 1904.

Vernonia obcordata is distinguished at once from the related species by the obcordate leaves, as broad as long, and by the yellow pappus.

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